COLOQUIO JUNIOR

Jueves 15 de octubre, 17:00h (café a las 18:00)

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Delzant's correspondence

In this talk I will present Delzant's classification of symplectic toric manifolds. Atiyah and Guillemin–Sternberg discovered a key convexity result involving the momentum map of the torus action. This led Delzant to obtain a correspondence that associates to each manifold its so-called Delzant polytope, an n-dimensional geometric figure that characterizes the manifold, its symplectic form, and the action of the torus. This polytope is obtained by taking the image of the momentum map. Conversely, given a Delzant polytope, one can construct a toric manifold by performing symplectic reduction on $\mathbb{C}^d$. Finally, we will use the polytopes to study the orbit space of our toric manifolds.

This correspondence has important applications in Kähler geometry, as it allows one to translate differential geometry problems into the study of convex functions on polytopes.

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